

IN THE CLAIMS

Please amend the claims as indicated in the following listing of claims, which replaces all previous listings of claims.

1-63. (Cancelled)

64. (Currently Amended) An enzyme mixture comprising a first enzyme and a second enzyme, wherein said first enzyme comprises ~~5'-3' polymerization activity of a first DNA polymerase or a reverse transcriptase having 5' - 3' polymerization activity~~, said second enzyme is a second DNA polymerase, said second DNA polymerase comprising the partitioning domain sequence YXGG (SEQ ID NO:6), the polymerase domain sequence DXXSLYP (SEQ ID NO:1), the polymerase domain sequence YIDTDG (SEQ ID NO:21), and the polymerase domain sequence KXY, and further comprising an amino acid substitution at an amino acid position selected from the group consisting of amino acid positions corresponding to Y410, T542, D543, K593, Y595, Y385, G387, and G388 of the wild type Pfu DNA polymerase identified at Accession No. P80061, wherein said second enzyme possesses 3' - 5' exonuclease activity and reduced 5' - 3' DNA polymerization activity as compared to the wild type form of the second enzyme.

65. (Currently Amended) The enzyme mixture of claim 64, wherein said second DNA polymerase is derived from a DNA polymerase selected from the group consisting of: Tli

DNA polymerase (Vent DNA polymerase), PGB-D (Deep Vent) DNA polymerase, Tgo DNA polymerase, Pfu DNA polymerase, KOD DNA polymerase, and JDF-3 DNA polymerase having the sequence of SEQ ID NO. 10.

66 - 69. (Cancelled)

70. (Currently Amended) The enzyme mixture of claim [[67]] 65, wherein said Pfu DNA polymerase contains the amino acid substitution G387P.

71. (Currently Amended) The enzyme mixture of claim 64, wherein said second DNA polymerase is DNA polymerase from the species *Pyrococcus kodakaraensis* comprising an amino acid substitution at an amino acid position selected from the group consisting of Y384, G386, G387, D404, T541, D542, and K592.

72. (Currently Amended) The enzyme mixture of claim 71, wherein said second DNA polymerase contains a mutation of G387P.

73. (Currently Amended) An enzyme mixture comprising a first enzyme and a second enzyme, wherein said first enzyme is a DNA polymerase having 5' - 3' polymerization activity, said second enzyme is a DNA polymerase of SEQ ID NO. 10 comprising an amino acid substitution at an amino acid position selected from the group consisting of amino acid positions

corresponding to Y410, T542, D543, K593, Y595, Y385, G387, and G388 of the wild type Pfu DNA polymerase identified at Accession No. P80061.

74. (Currently Amended) The enzyme mixture of claim 73, wherein said ~~JDF-3 DNA polymerase second enzyme~~ contains an amino acid substitution at an amino acid position corresponding to G387 of the wild type Pfu DNA polymerase.

75. (Previously Presented) The enzyme mixture of claim 64, wherein said first enzyme and said second enzyme are two different DNA polymerases.

76. (Previously Presented) The enzyme mixture of claim 75, wherein said first enzyme is wild type KOD or wild type JDF-3 DNA polymerase having the sequence of SEQ ID NO. 10, and said second enzyme is a DNA polymerase from the species *Pyrococcus furiosis*.

77. (Previously Presented) The enzyme mixture of claim 76, wherein said DNA polymerase from the species *Pyrococcus furiosis* contains an amino acid substitution at amino acid G387.

78. (Previously Presented) The enzyme mixture of claim 77, wherein said DNA polymerase from the species *Pyrococcus furiosis* contains the amino acid substitution G387P.

79. (Previously Presented) The enzyme mixture of claim 75, wherein said first enzyme is wild type Pfu DNA polymerase, and said second enzyme is JDF-3 DNA polymerase or a DNA polymerase from the species *Pyrococcus kodakaraensis*.

80. (Currently Amended) The enzyme mixture of claim 79, wherein said JDF-3 DNA polymerase or DNA polymerase from the species *Pyrococcus kodakaraensis* contains an amino acid substitution at the amino acid position corresponding to G387 of the wild type Pfu DNA polymerase.

81. (Currently Amended) The enzyme mixture of claim 80, wherein said ~~mutant KOD or mutant JDF3~~ DNA polymerase or DNA polymerase from the species *Pyrococcus kodakaraensis* contains an amino acid substitution at the amino acid position corresponding to G387 of the wild type Pfu DNA polymerase is a glycine (G) to proline (P) substitution G387P.

82. (Currently Amended) The enzyme mixture of claim [[67]] 65, wherein said first enzyme is Taq DNA polymerase.

83 - 84. (Cancelled)

85. (Currently Amended) A kit comprising an enzyme mixture comprising a first enzyme and a second enzyme, wherein said first enzyme comprises a ~~5'-3'~~ polymerization

~~activity~~ of a DNA polymerase or a reverse transcriptase having 5' - 3' polymerization activity, said second enzyme is a DNA polymerase, said DNA polymerase comprising the polymerase domain sequence DXXSLYP (SEQ ID NO:1), the polymerase domain sequence YIDTDG (SEQ ID NO:21), and the polymerase domain sequence KXY, and further comprising an amino acid substitution at an amino acid position selected from the group consisting of amino acid positions corresponding to Y410, T542, D543, K593, Y595, Y385, G387, and G388 of the wild type Pfu DNA polymerase indicated at Accession No. P80061, wherein said second enzyme possesses 3' - 5' exonuclease activity and reduced 5' - 3' DNA polymerization activity as compared to the wild type form of the second enzyme, and packaging material therefor.

86. (Currently Amended) The kit of claim 85, wherein said second enzyme is a DNA polymerase, said DNA polymerase comprising the partitioning domain sequence SYTGGF (SEQ ID NO:7), the polymerase domain sequence DXXSLYP (SEQ ID NO:1), the polymerase domain sequence YIDTDG (SEQ ID NO:21), and the polymerase domain sequence KXY, and further comprising an amino acid substitution at an amino acid position selected from the group consisting of Y410, T542, D543, K593, Y595, Y385, G387, and G388 amino acid positions of the wild type Pfu DNA polymerase indicated at Accession No. P80061, and wherein said second enzyme possesses 3' - 5' exonuclease activity and reduced 5' - 3' DNA polymerization activity as compared to the wild type form of the second enzyme.

87. (Previously Presented) The kit of claim 85 or 86, further comprising a reagent

selected from the group consisting of: dNTPs, reaction buffer, primer, and DNA enhancing factor.

88. (Currently Amended) The enzyme mixture of claim 74, wherein said ~~TDF-3-DNA polymerase second enzyme~~ contains the amino acid substitution G387P.

89. (Currently Amended) The enzyme mixture of claim 64, wherein when said second enzyme is a DNA polymerase from the species *Thermococcus gorgonarius* and comprises an amino acid substitution at an amino acid position selected from the group consisting of: D404, T541, D542, K592, Y384, ~~0386~~ G386, and G387.

90. (Previously Presented) The enzyme mixture of claim 89, wherein said second enzyme contains the amino acid substitution G386P.

91. (Currently Amended) The enzyme mixture of claim 64, wherein ~~when~~ said second enzyme is a DNA polymerase from the species *Thermococcus litoralis* and comprises an amino acid substitution at an amino acid position selected from the group consisting of: T544, D545, K595, Y387, G389, and G390.

92. (Previously Presented) The enzyme mixture of claim 91, wherein said second enzyme contains the amino acid substitution G389P.

93. (Currently Amended) The enzyme mixture of claim 64, wherein ~~when~~ said second enzyme is a DNA polymerase comprising an amino acid substitution at an amino acid position selected from the group consisting of amino acid positions: T542, D543, K593, Y385, G387, and G388 of the wild type Pfu DNA polymerase.

94. (Previously Presented) The enzyme mixture of claim 93, wherein said second enzyme contains the amino acid substitution G387P.

95. (Previously Presented) The enzyme mixture of claim 64, wherein said second enzyme is a DNA polymerase from a bacterium in the division Archaea.

96. (Previously Presented) The enzyme mixture of claim 64, wherein said second enzyme is a DNA polymerase from the species *Pyrococcus furiosus*.

97. (Previously Presented) The kit of claim 85, wherein the second enzyme is a DNA polymerase from a bacterium in the division Archaea.